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ABSTRACT

During the last 60 years, Turkey has experienced significant demographic changes and economic development. In response to these changes, policymakers in Turkey have initiated a number of reforms in the area of vocational and technical education. One such reform was the undertaking of a joint effort between the Turkish Council of Higher Education and the World Bank Technician Training Project. Their joint project, called the Industrial Training Project (ITP), was conceived to improve productivity and maintain high rates of growth of manufactured exports through the establishment of preservice technician training centers, curriculum and staff development programs, and efforts to strengthen the technician training center management system. The project, which is slated to be implemented between 1984 and 1990, is expected to enhance the potential of Turkey's industrial sector through the improvement of the national capacity to provide industrial training. Project planners estimate that, by 1989, the ITP will have provided approximately 940 graduates and will have produced instructor- or technician instructor-level training to some 164 fellows. (MN)

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THE DEVELOPMENT OF TWO-YEAR, POSTSECONDARY TECHNICAL TRAINING PROGRAMS: A SHORT SURVEY OF TURKEY'S NEEDS AND EXPECTED CONTRIBUTIONS OF THE NEWLY STARTED TECHNICIAN TRAINING PROJECT

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U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
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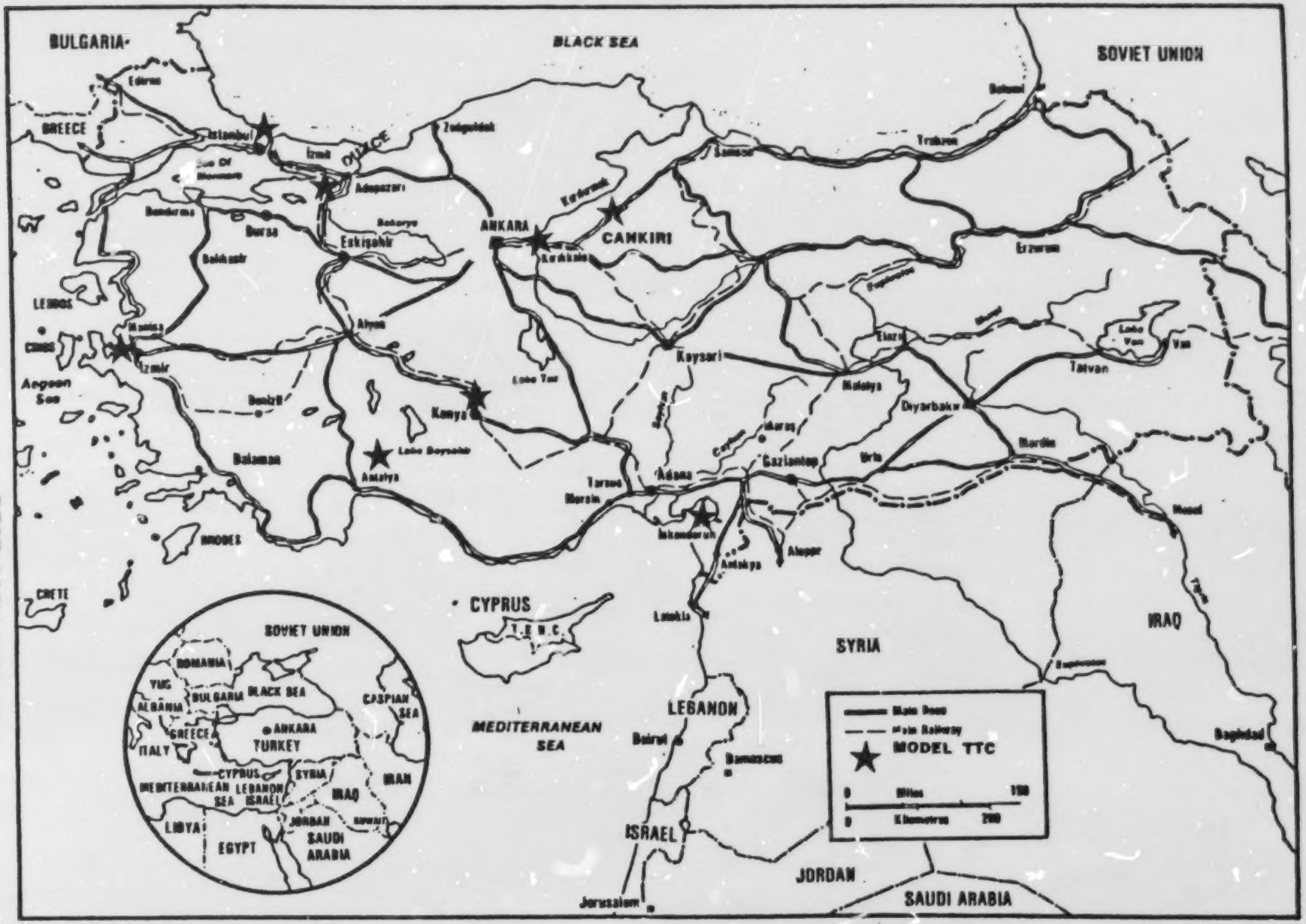

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I. INTRODUCTION

It should not be erroneous to say that every passing day Vocational and Technical Education are becoming to be better recognized and occupying their proper, well deserved places within the education systems of the world's developed and developing countries alike. Turkey, a rapidly growing country striving to expand her present potentials in every direction possible, may be stated as a typical example of such positive change.

Especially during the last twenty five years the initiation of a number of dynamic development attempts have increased greatly the importance of vocational and technical education and some remarkable improvements have been accomplished in the number and variety of secondary and postsecondary vocational and technical schools. In spite of such promotion it cannot yet be said that the efforts spent to guide the Turkish youth into vocational and technical education areas have reached the dimensions answering adequately the country's general or regional needs.

The existence of certain somewhat complex problems within the education system that seemed to place importance on accumulation and assessment of knowledge more than anything else have delayed a long time the formulation and implementation of applied education efforts dealing directly with individual needs of students and with those of society. In addition, the developments in the vocational and technical education sectors have not been quite able to adjust themselves to the rapidly changing technological advances that required reforms in curricula, instruction, qualifications of teaching staff and equipment.

The recognition and acceptance of the existing problems and of this lag have recently led to a number of attempts to compensate for the shortcomings within the vocational and technical education subsystems, attempts that stressed the need for a productive collaboration between educational institutions and industry circles. Perhaps the most significant of such attempts and the latest indication of better appreciation of the overall contributions of vocational and technical education to the social and economic prosper of the country has been the initiation of the Technician Training Project by the Council of Higher Education with the assistance of the World Bank.

The basic aim of this paper is twofold: Within the first fragment of the paper some general information will be presented on the socio-economic and educational

background of Turkey since the establishment of the Republic in 1923, with more attention to the last twenty five year period. A short look at the contemporary higher education setup will follow that presentation. Next, the current post-secondary vocational and technical education system will be drawn in outline and a list of a number of basic needs to improve the instructional and training capacities of the system will be given.

The second part of the paper will deal with the particulars of the Technician Training Project. First the objectives and scope of the project will be stated, to be followed by detailed descriptions of the various dimensions of the project such as improvement of the management system, development of the technician training centers, staff and curriculum development, procurement of equipment and betterment of physical facilities. Secondly, the topics of project cost and financing, project planning, management and implementation will be discussed. This presentation will cover three basic components of the project in somewhat detailed fashion: Consultancy services, fellowship programs and procurement of equipment. Finally, the benefits to be achieved by the project will be commented upon and some conclusions will be drawn.

II. THE SOCIO-ECONOMIC AND EDUCATIONAL BACKGROUND

In order to better understand the present needs of Turkey for flocks of vocationally and technically trained people one must review the socio-economic and educational trends operating since the modernization attempts started with the proclamation of the Republic.

A. The Demographic Changes within Sixty Years

As is known, Turkey became a republic under the leadership of Ataturk in the year 1923. Within the sixty one years passed the population grew from 12 million to about 48.5 million. Despite the fact that the growth rate in population seems to be declining in recent years -- 2.1 percent per annum in 1980's compared to 2.8 percent in 1950's -- the population is estimated to reach an impressive figure of 119 million in the year 2110.

In 1927 24.2 percent of the total population lived in cities and large towns and 75.8 percent in rural areas. In 1980 the percentage of people residing in urban areas had increased to 43.9. This change was caused mainly by a steady rise in

migration movements from rural areas to urban settlement regions starting in mid 50's and continuing to our day, which along with those of other cities changed the population characteristics of the three main cities of Turkey, Istanbul, Ankara and Izmir. These migrations which transformed Turkey from a predominantly rural society into a rapidly urbanizing country necessitated on one hand creation of a large number of employment opportunities and on the other establishment of new educational institutions to train the new city dwellers for a number of appropriate skills.

A large number of such institutions had to be vocational and technical in nature. To give an example, the number of schools of commerce and tourism more than doubled between 1975 and 1982. The enrollment in the secondary vocational/technical education subsystem reached the figure of 25,000 in 1982 which represented one third of all the students at secondary education level. Projections indicate that by the end of the century Turkey will be fully industrialized and 75 percent urbanized.

When the changing characteristics of the Turkish population are being discussed a few comments must also be made about the migrant Turkish workers employed in certain Western European as well as in Arab countries. While these workers whose number was estimated to be 1,015,500 in 1983 contribute a great deal to Turkish economy by sending portions of their pay home and by establishing productive and modern enterprises upon their return to Turkey, they may become causes of shortages in trained manpower in many instances.

B. Economic Developments

The Turkish economy experienced some very impressive growth rates between 1960 and 1974 and expanded itself as much as 6.0 to 7.0 percent per year. During these years positively contributing factors were "relative price stability, manageable budget deficits, modest reliance on external debt and sound balances of payments," and the growth rate achieved in the Gross National Product was due to "continued high levels of investment and consumption, mostly in the public sector."

Between 1974 and 1980, however, such adverse effects as high increases in oil prices and rapidly rising inflation rates in developed countries created an increase in the money supply and caused an acceleration in inflation. With a successful government intervention the inflation rate was brought down from 101 percent in 1980 to 25 percent in 1982. Gross Domestic Product was increased from 4.6 percent to 5.6 percent between 1982 and 1984, which evidently is the

the highest growth rate since 1976.

Other positive developments were also noted in economy. The contributions of manufacturing, mining, power and construction sectors grew from 16 percent in 1950 to 23 percent in 1970 and to 35 percent in 1984. Industrial production increased by 7.6 percent in 1983 and capacity utilization which had been somewhat low during the previous years rose to about 70 percent the same year. The industrial sectors which provided almost 20 percent of all employment in 1980 were estimated to be expanding in employment terms at an annual rate of 3 percent.

Although the manufacturing industry seemed to grow at a fast rate between 1978 and 1984 the productivity of investment noted a decline. Such a decline was tied to inadequate industrial training and poor management techniques in industry. The recent studies show a manpower shortage especially in the so-called exporting industries which require modern production techniques, high standards of quality control and specialized machinery. Table I provides a comparison of some selected occupations in the manufacturing sector of Turkey with those of other developed and developing countries.

Table I / Comparison of Selected Occupations in the Manufacturing Sector

		No. Per '000 in Manufacturing Sector		
Country	Year	Engineers	Technicians	Foremen and Supervisors
United States [a/]	1970	33	24	47.0
West Germany [a/]	1970	22	35	10.0
Israel [a/]	1972	14	37	19.0
Greece [a/]	1971	5	2	4.0
Turkey [b/]	1980	7	9	0.5

Sources:

a/ Zymelman M. Occupational Structures of Industries. Education Department, The World Bank, Washington, D.C., 1980.

b/ 1980 Census, State Institute of Statistics, Ankara, Turkey.

As can be seen from the table, the proportions of engineers technicians, foremen

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and supervisors per 1000 employees in the manufacturing sector in Turkey in 1980 were below those working in the United States, West Germany and Israel.

Table II provides an estimated account of labor demand and supply of selected occupational groups, including technicians and workers for the period of 1985-1995. The numbers in the table were calculated by the World Bank Mission to Turkey.

Table II / Demand and Supply of Professional Scientists and Engineers, Technicians, Skilled and Semi-skilled Workers In Industry, 1985-95

(in '000s)

Occupational Category	Estimated Employment in 1985	Additional Demand for Labor due to Economic Growth and Attrition a/	Additional Supply from Education and Training Institutions	Supply as % of Additional Demand
Professional Scientists & Engineers	178	175	120	69
Technicians	104	117	20	17
Skilled & Semi-skilled Manual Workers	3,211	2,447	1,430 b/	58

a/ Excluding upgrading requirements.

b/ Not including on-the-job training.

Source: World Bank Mission for Technician Training Project in Turkey.

The figures in the table indicate that additional manpower demand exceeds additional supply of engineers, technicians, skilled and semi-skilled workers in Turkey within the projection period. The recently started Technician Training Project by the Council of Higher Education aims at increasing the number of technicians in the country and will produce some 8,000 graduates at the eight Technician Training Centers over the projection period.

C. A Short Summary of the Educational Developments in Turkey

The founder of the Turkish Republic, Kemal Ataturk, as early as 1922, stressed the importance of education and, particularly of technical and vocational education,

and gave an account of early educational activities during the establishment of the Republic, as follows:

> "The Young Republic, in order to raise the country to the contemporary level of civilization in every field, placed importance on preparing educational programs from the start. It was extremely difficult, however, even to determine where and how to launch the development task because all of the issues to be attended were somewhat related with each other. On the other hand, no matter what task was decided to be handled, the insufficiency of technical and vocational knowledge would show itself. National Education was one of the most significant issues. The technical education problem could not have been given first priority because no employment possibilities existed for those graduating from such schools. Only a few factories were acquired from the Empire. National institutions productive in economic areas were practically nonexisting. It was necessary therefore for the work circles of technical nature at least to start showing some sort of development."

The Turkish Republic thus gave the National Education the first priority and started a number of educational reforms which covered mainly the following:

- Literacy campaigns to change the alphabet
- Education of women
- Achievement of universal primary education
- Development of a dual track education system: general and vocational
- Development of adult and nonformal education (through establishment of People's Houses and People's Education Centers and through rural and agricultural education)
- Development of a system of university / higher education dedicated to the training of scholars and professionals and to research to support the profession.

From this list of reforms it is not difficult to see the importance Ataturk placed on vocational and professional education during the early years of the Republic. Following the educational reforms vocational and technical education were administered through a number of formal technical schools.

Starting in the mid 20's quite a number of years were spent mainly to increase the numbers of total enrollment and teachers, and to improve schools and educational programs in quantity and quantity. Between 1924 and 1983 the number of pupils in primary schools increased about 20 times (from 336,061 to 6,516,837), those attending secondary schools 282 times (from 7,146 to 2,018,079), and students in vocational and technical schools 57 times (from 6,547 to 373,840).

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The educational accomplishments accelerated after the 40's, increasing the number of primary schools five times (from 10,596 to 47,855), secondary schools 19 times (from 320 to 6,121), and vocational and technical schools 13.5 times (from 103 to 1,382). Between 1940 and 1983 the number of teachers in primary schools grew 11 times (from 20,564 to 208,912), secondary school teachers more than 16 times (from 5,411 to 87,719), and those in vocational and technical schools 30.5 times (from 1,355 to 41,364). Within the same period the higher education faculties and schools surged from 20 to 334, teaching staff members from 967 to 20,200, and student enrollment from 13,000 to 348,000.

With the introduction of the Basic Law on National Education No. 1739 in 1973 the education system was expanded and refined further. This law restructured the national education setup as follows:

1. A standard distribution of formal education from kindergarten to university.

2. Compulsory attendance through the five years of primary education.

3. Means for tracking students into specialized schools (vocational and technical) shortly after completion of primary school.

4. Opportunities for graduates of specialized secondary schools to return to the general academic stream for university education.

In spite of the fact that the same law divided the Ministry of National Education into two main tracks, general academic education and vocational/technical education, the postsecondary vocational/technical education component was not fully developed.

Presently the secondary vocational/technical education subsystem is composed of vocational institutes, trade schools, industrial and technical high schools. While the total enrollment in this group has gone up to 373,840, there need to be some improvements in the instructional programs and the applied aspects of training in its institutions. The Ministry of National Education has recently decided to look after these needs and now is working toward establishing a program of reorganization with the help of a loan from the World Bank. **Figure I shows the school system.**

The Fifth Five Year Development Plan prepared for the period of 1985-1989 stresses the need to start new training projects in order to create employment possibilities for the unemployed youth especially, and lists a number of remedies. Certain specially

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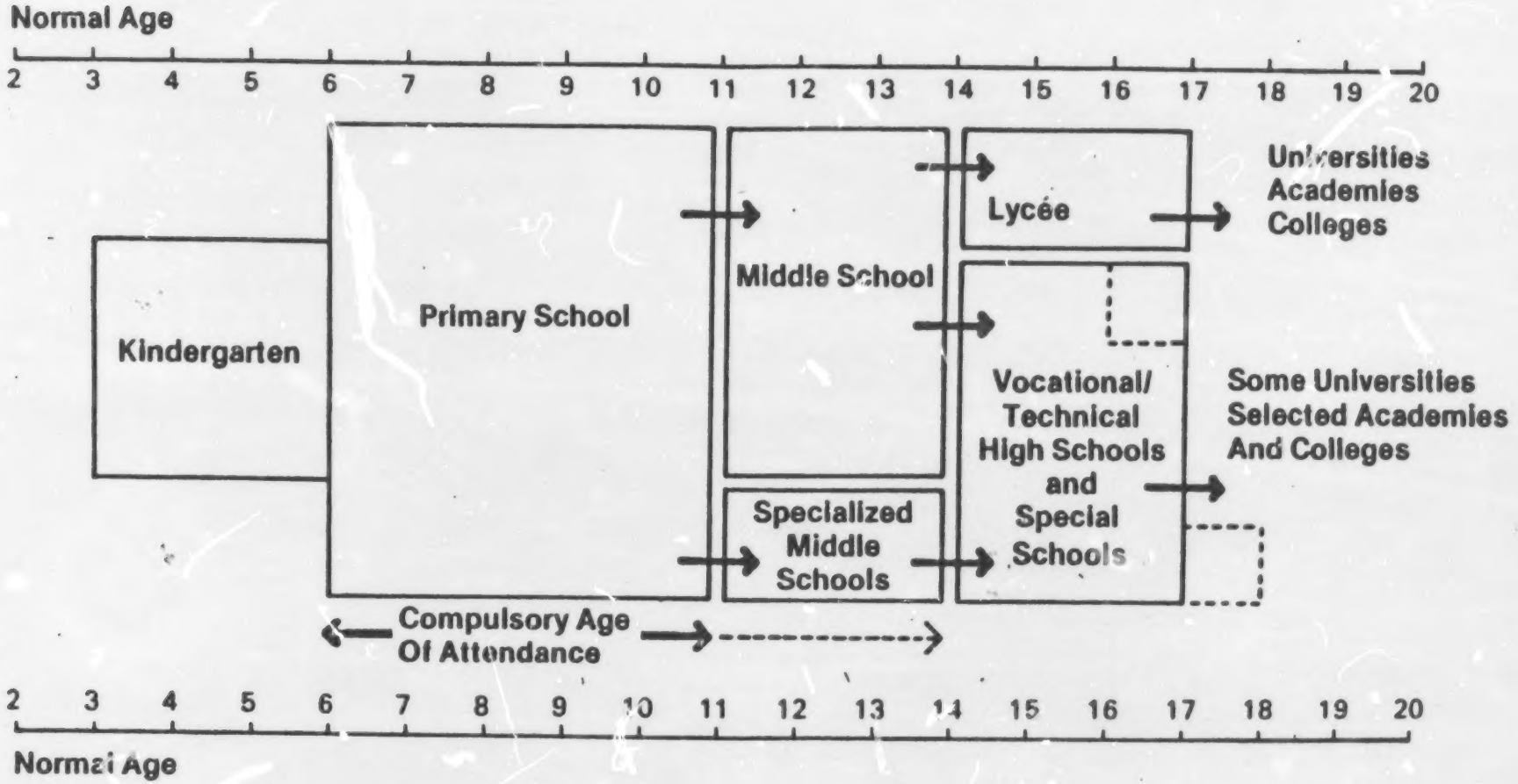
FIGURE 1

DESCRIPTION OF THE SCHOOL SYSTEM IN TURKEY


Normal Age
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Kindergarten
Primary School
Middle School
Specialized Middle Schools
Lycée
Vocational/ Technical High Schools and Special Schools
Universities Academies Colleges
Some Universities Selected Academies And Colleges
Compulsory Age Of Attendance
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Normal Age

planned public projects employing those working seasonally in rural areas, careful reevaluation and more extensive utilization of out-of-country employment possibilities, increasing the present level of production capacity in manufacturing industry with the help of new additional work shifts, provision of certain tax exemptions and other benefits to the prospective employers for the non-working youth are some of such remedies. Other measures planned to combat the existing unemployment include increasing financial and other kinds of assistance to those starting their own businesses, providing proper vocational guidance services to the youth whether they attend school or not and starting such services as early as middle school level, and adequately solving such matters as the qualifications, tasks, titles, responsibilities, and wage levels of those to be employed at middle and lower levels of vocational and technical manpower.

A number of vitally significant educational development objectives planned to be realized during the next five year period may be stated as follows:

- Raising the quality of education at all levels.
- Changing the instruction and educational attempts at all schools in order to make them more life-oriented.
- Starting skill training practices for those students not wishing to go further in their education but need vocations, with the help of extensive education programs.
- Improving the pre-employment and on the job training programs through reassessment of the principles governing production increase.
- Initiating additional technician training programs in order to prepare the middle level manpower needed for development in many areas.
- Developing the existing technician training programs further.
- Increasing the volume and variety of foreign language programs to offer them at all levels of education.
- Stressing on the job training of teachers and fitting the educational programs to the necessities of our day.
- Improving the passage possibilities and equivalence between extensive and formal education institutions.
- Developing new teacher training programs for technical high schools.

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As can be observed, the listed general policy items of the new five year plan emphasize more productive utilization of manpower potential for further development needs of the country through enhancement of existing educational possibilities as well as introduction of a number of modern practices employed in certain developed countries.

D. Higher Education System

The higher education system in Turkey was reorganized in 1981 with the introduction of a new higher education law creating a body called the Council of Higher Education (YOK). The responsibility of planning, organizing, administering, and supervising education in all higher education institutions comprising universities, specialized academies and the two-year postsecondary higher vocational schools was delegated to the Council.

The new law increased the number of universities which now is 27, and brought certain innovations to develop further the subsystem of postsecondary vocational and technical education. The higher vocational schools presently are 60 in number and the programs of specialization have noted a great deal of change both in number and in variety since the new organization.

The Council handles all policy and administration matters related to the higher education institutions which, among others, include the university entrance requirements, admission of students, supervision of the administration and of educational programs, staffing of the universities and other institutions of higher learning and curriculum development. The Council of Higher Education, an autonomous official body, is headed by a president appointed directly by the President of the Republic. The members of the Council, numbering 25 in total, are selected by the President of the Republic, the Cabinet, Ministry of National Education, Chief of General Staff and the Inter-University Council from among those who served as rectors at universities and high government officials presently working or retired. The organization chart of the Council is given in Figure 2.

Under the president the administrative structure of the Council includes two vice presidents, a secretary general and assistant secretary general, and seven major directorates which are:

- Education and Training
- Research, Planning and Coordination
- Personnel
- Publications and Documentation
- Administration and Finance

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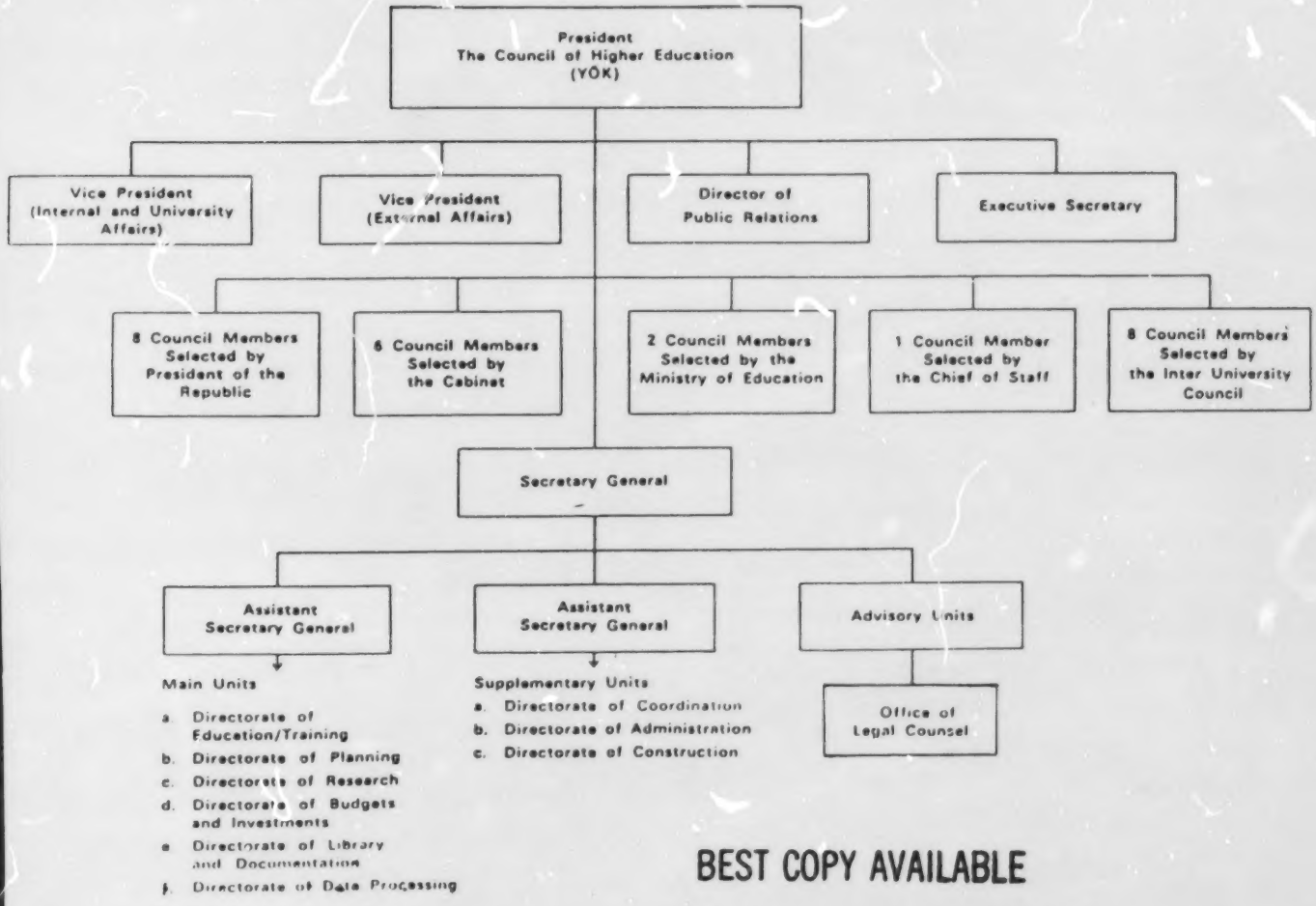
FIGURE 2

Republic of Turkey

The Council of Higher Education

(YÖK)


President
The Council of Higher Education
(YÖK)
Vice President
(Internal and University Affairs)
Vice President
(External Affairs)
Director of
Public Relations
Executive Secretary
8 Council Members Selected by President of the Republic
6 Council Members Selected by the Cabinet
2 Council Members Selected by the Ministry of Education
1 Council Member Selected by the Chief of Staff
8 Council Members Selected by the Inter University Council
Secretary General
Assistant Secretary General
Assistant Secretary General
Advisory Units
Main Units
a. Directorate of Education/Training
b. Directorate of Planning
c. Directorate of Research
d. Directorate of Budgets and Investments
e. Directorate of Library and Documentation
f. Directorate of Data Processing
Supplementary Units
a. Directorate of Coordination
b. Directorate of Administration
c. Directorate of Construction
Office of Legal Counsel

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- Construction and Maintenance

- Budget and Investments

The Council works closely with and supervises the activities of Higher Education Supervisory Council, the University Student Selection and Placement Center and the Interuniversity Board. The Higher Education Supervisory Council is a unit established to observe and supervise the overall functions of the universities, their faculties, schools and teaching staff. The University Student Selection and Placement Center, also attached to the Council of Higher Education, is responsible for the preparation, implementation and evaluation of university entrance examinations in accordance with the policies set by the Council as well as placement of applying students into appropriate programs, doing research related with student selection and placement activities.

The Center also provides other needed services for higher education institutions such as developing, distributing and evaluating questionnaires, organizing various types of examinations, and assisting in registration procedures of university students. The number of applicants for higher education in Turkey has been increasing steadily and the Center has handled the selection and placement processes of students growing in number from 224,456 in 1974 to 437,118 in 1984. The Center which employs at present 70 full-time academic staff and 35 specialists working part-time collects and processes statistical information pertaining to the educational programs, academic staff, students and graduates of higher education institutions and makes such information available to the Council of Higher Education, Ministry of National Education, Youth and Sports, State Planning Organization, and State Institute of Statistics.

The Interuniversity Board, an academic body made up of university presidents and professors selected by the senates of universities, is given the responsibility of coordinating the educational and instructional, scientific research and publication activities and formulating recommendations for the Council of Higher Education as well as for universities. Other duties include preparing proposals for staffing of higher education institutions, regulating and coordinating the principles and duration of educational processes undertaken at similar higher education components for reasons of conformity, accrediting the doctoral works, docentship and professorship titles earned outside the country, and handling the formalities for the appraisal of docentship candidates.

Since its establishment in 1981 the Council of Higher Education has been able to accomplish a number of difficult tasks within the higher education system some of which can be summarized as follows:

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- Reevaluating the existing educational programs in terms of manpower needs of the country and making necessary adjustments.

- Increasing the number of students admitted for higher education 33 percent in 1982 and 21.6 percent in 1983.

- Actualizing a number of needed changes and improvements in the quantity and variety of technician training programs in higher vocational schools.

- Attaching the higher vocational schools to universities and establishing an office of coordination within the Council.

- Raising the number of students to be admitted to higher vocational schools by 60 percent in 1983.

- Arranging for a loan of 32.4 million dollars with the World Bank to further improve the two-year postsecondary vocational and technical education.

- Planning and starting programs of training in order to meet the teacher needs of the country at various levels during the next 10 years.

- Setting the minimum levels of instruction load for teaching staff and reorganizing the examination system.

- Increasing the academic achievement of students in medicine, dentistry and pharmacy by 12.7 percent, in social sciences by 13 percent, and in engineering and science programs by 31.7 percent between 1981 and 1983.

- Balancing the number of academic staff employed at 27 universities scattered over Turkey through changes in rules for academic promotion and an inter-university rotation system.

- Stressing the significance and necessity of original scientific research and publications in the work of teaching staff members at higher education institutions.

- Increasing the cadre of research assistants within universities five times.

- Raising the number of institutes facilitating and supervising doctoral programs to 125.

- Introducing reforms in university autonomy by assigning certain duties and responsibilities previously attended by other government agencies to universities themselves.

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- Improving student/teaching staff ratio for the benefit of students.

- Increasing the number of academic staff employed at higher education institutions.

- Setting some impressive targets for total enrollment of students and numbers of teaching staff to be reached in 1990.

E. The Contemporary Postsecondary Vocational/Technical Education: An Assessment of the Needs

The first of a number of significant moves in the area of vocational/technical education in Turkey following the foundation of the Republic may be said to be the Law No. 2765 passed on June 7, 1935, attaching the Regional Schools for Crafts to the Ministry of National Education. Another of such moves is the Law No. 4304 enacted on August 14, 1942 which made opening of new vocational and technical schools possible and expanded the facilities and programs of the existing schools of technical nature.

During the early years of the Republic a large number of vocational and technical schools were those providing education and training at secondary level and consisted of the Teacher Training Schools, Schools of Religion, Boys' and Girls' Craft Schools, Schools of Commerce, Agricultural Schools, Conservatories and others. Following the adoption of the 1961 Constitution vocational and technical education began receiving the proper attention and the five-year development plans laid the fourdations of a number of training programs for badly needed skilled manpower and facilitated the institution of additional vocational and technical schools.

The Basic Law on National Education No. 1739 legislated on June 6, 1973 reorganized the entire education system of the country and divided it into two main divisions, that of general education, and vocational and technical education. The Law also introduced certain new practices such as the requirement for private sector enterprises employing more than 100 workers to establish their own training programs. Within the period from the 60's to the 80's the secondary level vocational and technical schools noted a great deal of increase in number and their programs of instruction were improved and to a certain extent updated.

Despite some impressive changes in numbers, the present teacher shortages in vocational and technical high schools, scarcity of training tools, incompetent and inadequate utilization of the existing equipment, and the inability of the educational programs to keep up with the rapidly changing technological and scientific developments seem to hinder the employment of graduates by business and industry circles. The technical high schools have not yet reached their normal capacities. Fully functioning levels

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have not been achieved in girls' technical schools and schools of agricultural technology. The instructional programs in schools of commerce and tourism need innovations and adjustment to speedily changing and developing service areas.

The Higher Vocational Schools that make up a large portion of the postsecondary two-year institutions have recently been increased to 60 in number following the expansion of a number of programs and rise in total enrollment. These schools are scattered all over the country to answer the regional needs for the middle level technicians trained in highly diversified areas. They offer highly technical educational programs as well as those that can be classified as not so technical.

All of such schools are attached to universities and thus are under the supervision of the Council of Higher Education. The universities exercise certain amount of control over the vocational schools in curriculum development, staffing and financial management. The schools established within the campuses of their parent university in special may benefit from the services of the university academic staff and share the physical facilities and equipment of the university. While receiving such help the vocational schools should exercise extreme care not to alter their distinctive objective of training technicians with skills fitting the needs of the business and industrial circles around them. A number of these schools are located at sites distant to the universities where they have to spend efforts to establish adequate physical facilities, develop curricula and obtain the equipment and tools for productive instruction without much close help.

The Council of Higher Education, fully appreciating the benefits of a fruitful collaboration between higher vocational schools and their parent universities encourage such cooperation to the fullest but advises university administrators to be extremely careful and attentive to the needs of these schools during the implementation of the Technician Training Project. Presently quite a number of these schools suffer from inadequate physical faclities, shortage of academic staff, poor linkage with business and industry establishments, outdated curricula, and scarcely equipped laboratories and workshops.

Higher Vocational Schools are at present administered by the Directorate in charge of the Technician Training Project. The Administrator/Coordinator and Deputy Administrator/Coordinator carrying the responsibility of improving all of the existing 60 schools are appointed by the President of the Council of Higher Education. The Project plans to develop and enrich eight of these schools within the coming five years which is given first priority by the Council as well. The Technician Training Project, in addition, provides direct access to the assistance of university presidents to the Project administrators on matters related with the physical and educational needs of higher vocational schools. (see figure 3.)

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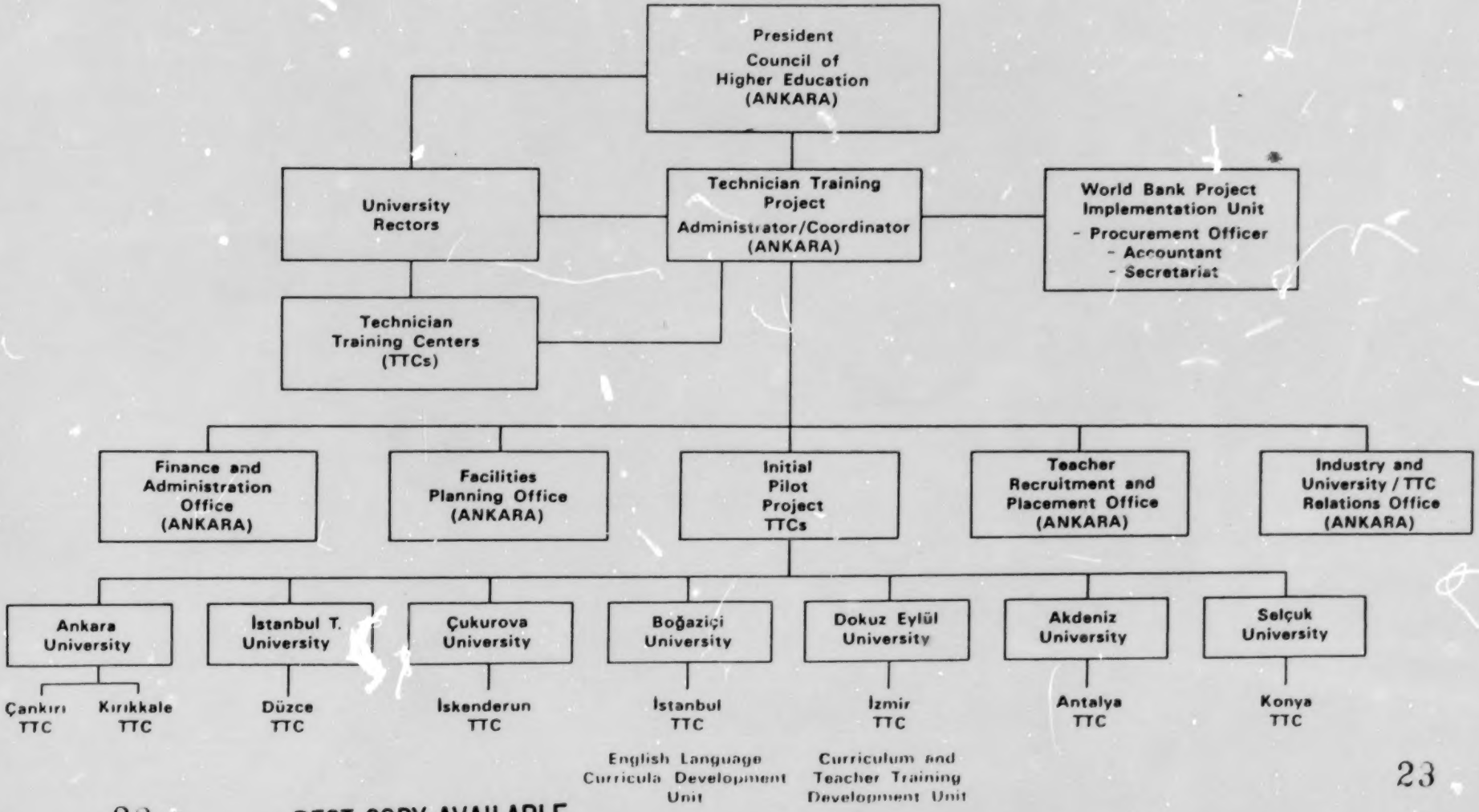
FIGURE 3

Council of Higher Education of Turkey, World Bank Technician Training Project (TTP) Proposed Organizational Management System



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In these schools where the total enrollment is about 20,000 a number of unsolved problems exist presently which hamper the productive utilization of current potentials and these problems may be listed as follows:

- The physical facilities are usually inadequate, reducing the motivation of students for education and their sense of belonging.

- Some students feel discontended with the offerings of two year programs and display more interest in four year university education.

- A number of curricula in use at higher vocational schools are not much advanced than those adopted by secondary level vocational and technical schools, and this makes the students feel unworthy and depressed.

- Many of these schools have not established effective links with the surrounding industries.

- The representatives of industries, in some instances, do not consider the graduates of these schools as skilled and qualified as those completing the industrial high school programs.

- The contributions of the business and industry circles existing within the vicinity of the schools are not given sufficient consideration during the development as well as implementation of curricula.

- The foreign language knowledge and skills of the academic personnel of these institutions are poor, and this limits the educational accomplishments in a number of ways.

- These schools have not yet reached capabilities to benefit from the possibilities of computer aided instruction.

The Council of Higher Education, after observing and evaluating such shortcomings closely, decided to deal with them properly by attending to the following matters with the help of the Industrial Training Project:

- Development of adequate physical facilities, which will mean designing and constructing buildings fit for the requirements of vocational and technical education, such as size, safety, etc.

- Improvement or change of the existing curricula to be able to train the students with the skills needed in industry.

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- Employment of academic staff trained sufficiently in both the content matter and in pedagogical courses. Additional training of the present personnel in similar manner.

- Reorganization of laboratories and workshops and enriching them with well selected equipment proper for the level of education attempted.

- Establishment of balanced and productive links between higher vocational schools and their parent universities in order to raise the existing academic standards while not neglecting the characteristic needs of vocational and technical approaches to education.

- Assessment and development of the present management at higher vocational schools through training the personnel on such fudamental matters as administration, employment and supervision of staff, student affairs, program development and evaluation, budget and finance and extra curricular activities.

- Introduction of some most modern technologies into the instructional programs of these higher education institutions.

- And finally, improvement of the status of vocational and technical education in general, making this type of experience an attractive and rewarding one for the Turkish youth.

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FIGURE 4

TURKEY
ORGANIZATION OF THE INDUSTRIAL TRAINING AND DEVELOPMENT CENTER (SEGEM)

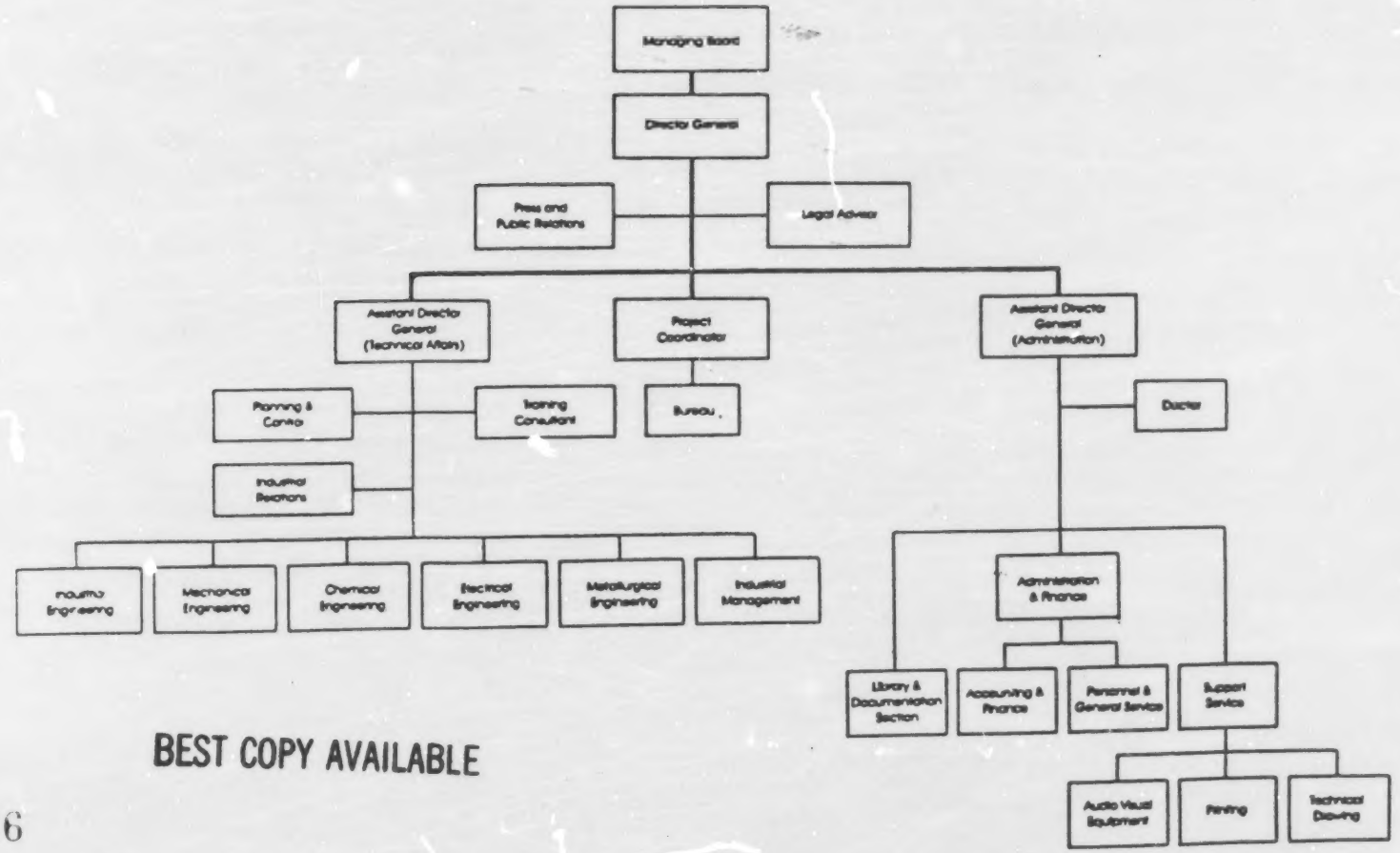

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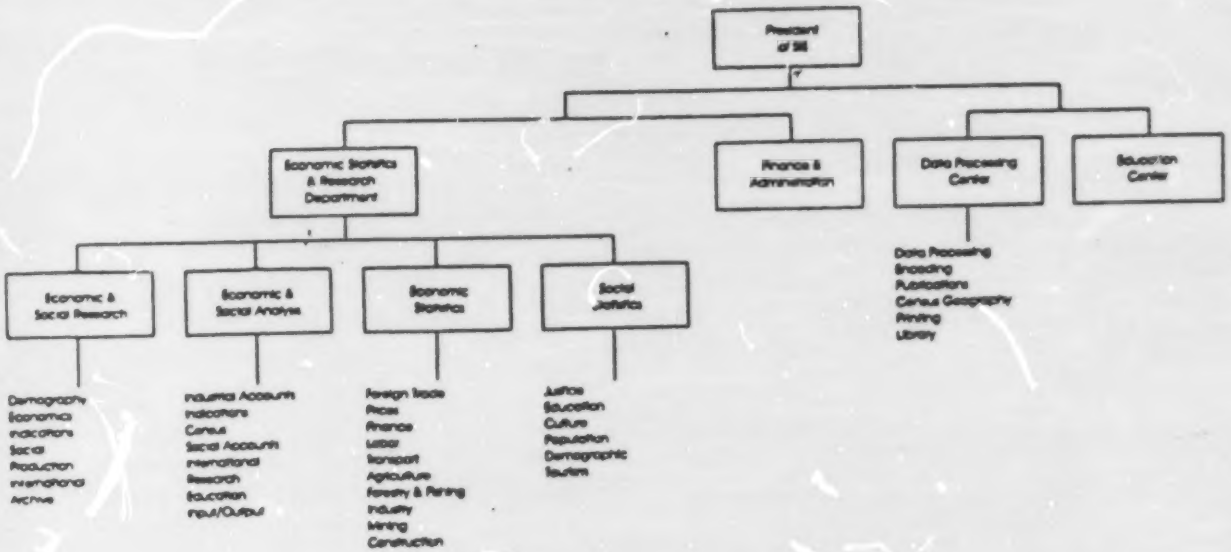
FIGURE 5

TURKEY
ORGANIZATION OF STATE INSTITUTE FOR STATISTICS



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III. THE COUNCIL OF HIGHER EDUCATION /WORLD BANK TECHNICIAN TRAINING PROJECT

The initiation and development of the Technician Training Centers constitutes the largest component of the joint effort between the Council of Higher Education and the World Bank called the Industrial Training Project envisioned to assist in improving the institutional capacities of three agencies of the Turkish Government: The Council of Higher Education (YÖK), The Industrial Training and Development Center (SEGEM) and the State Institute of Statistics (SIS). Because we are here are more concerned with the proposed developments to take place in the Higher Vocational Schools we will concentrate our efforts on the particulars of that portion of the Project, and will only briefly identify the other two elements.

The Industrial Training and Development Center (SEGEM), the main Government agency for in-service industrial training is established in 1978 and is managed by a Board composed of representatives from the State Planning Organization, The Ministry of Industry and Trade and the Ministry of National Education. The fundemental responsibility of the Center is to provide in-service training to the public and private sectors of industry in management, technical subjects and production, mainly at the professional level. In 1982, SEGEM ran 100 training programs for staff drawn from some 1,270 public and private enterprises, employing its own 45 professional staff as well as consultants from industry, universities and abroad. (Figure 4 gives the organization chart of SEGEM)

The State Institute of Statistics is an official agency of the Government of Turkey, attached to the Prime Ministry, established to carry out periodic censuses and to prepare statistical data dealing with geographical, social and economic characteristics of the country. In addition to such activities, the Institute reports the findings of certain nation-wide surveys and publishes some selected international statistics in order to make possible the comparison of the production levels of certain countries of the world. (Figure 5)

A. The Project

The Industrial Training Project, approved by the Government of Turkey and became binding on September 18, 1984, may be classified as a comprehensive approach to a large number of complex and interrelated educational needs.

1. Objectives and Scope

The objectives of the Industrial Training Project, consistent with the Turkish Government's development strategy to improve productivity and maintain high rates of growth of manufactured exports, are as follows:

(a) to strengthen the institutional capacity of YÖK and SEGEM to provide industrial training programs;

(b) to alleviate scarcities of technicians in industry by assisting the development of pre-service technician training programs; and

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(c) to improve industrial productivity by developing SEGEM's in-service, on-the-job, industrial training programs for middle level manpower and professional staff, and to establish a basis for a national industrial training system.

In order to assist the Government achieve these objectives, the project would include the provisions of:

(a) equipment, furniture, and minor refurbishing for eight pilot Technician Training Centers (TTC's) under YÖK;

(b) technical assistance to YÖK for curriculum and staff development for the TTC's and to assist with the strengthening of the TTC management system and future project development;

(c) equipment and technical assistance to SEGEM to assist with the development of a framework for a national industrial training system, program expansion, diversification and improvement, and future project development; and

(d) technical assistance to the State Institute of Statistics (SIS) for an overseas fellowship training program.

2. Description of the Project

The YÖK component of the Project would consist of equipping, furnishing and minor refurbishing for eight pilot TTC's, as well as technical assistance for expert services to assist the development of new curricula and staff, strengthening the management system, and for a fellowship training program for instructors. The technical assistance program is necessarily substantial, involving some 21 man years of expert services and 126 man years of fellowship training. Table III gives the particulars of the technical assistance program.

a. Pre-Service Technician Training Centers. YÖK presently manages 60 two-year post-secondary higher vocational schools, and this project would support the conversion of eight of these into pilot Technician Training Centers (TTC's). The eight pilot centers have been selected on the basis of: (a) their proximity to local industry; (b) the level of support for the program from local industry, and (c) the adequacy of the existing buildings for technician training programs. The eight sites chosen are Antalya, Cankiri, Düzce, Iskenderun, Istanbul, Izmir, Kirikkale and Konya. These centers have classroom and workshop space that need minimal refurbishing to become adequate for their purpose.

The project would provide about 2,600 training places in new industrial technician training programs (See Table IV). The projected enrollment target would be reached by 1990 (Table V), and the number of technicians graduating annually would be about 1,200 from 1991 onwards.

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TABLE III

Technical Assistance Program for the Council of Higher Education

	Experts			Fellowships		
	Number	Duration (Months)	Total Number of Man-Months	Number	Duration (Months)	Total Number of Man-Months
Program Management						
Technical Education Planner	1	30	30	4	1	4
Equipment Procurement and Facilities Planner	1	24	24	2	1	2
Examinations and Accreditation	1	12	12	2	3	6
Monitoring, Evaluation and Education Management	-	- 1/	21.5	10	- 1/	22
Sub-total	- 2/	-	87.5	18	-	34
Program Development	-	- 1/	12	-	-	-
Curriculum and Staff Development (Ankara, Izmir and Istanbul)						
Control and Instrumentation	1	12	12	8	9	72
Communications	1	12	12	8	9	72
Industrial electronics	1	12	12	16	9	144
Electrical Engineering	1	12	12	24	9	216
Mechanical Engineering	1	12	12	36	9	334
A/C and Refrigeration	1	12	12	8	9	72
Foundry Work	1	6	6	2	9	18
Agricultural Engineering	1	6	6	6	9	54
Computer Science	1	6	6	6	9	54
Civil Engineering	1	12	12	14	9	126
Basic Science	1	12	12	2	9	18
Petroleum Engineering Technology	-	-	-	2	9	18
Petrochemical Engineering Technology	-	-	-	2	9	18
Technical Drawing	-	-	-	2	9	18
Mathematics	-	-	-	2	9	18
Computer Applications	-	-	-	5	9	45
Business Applications	-	-	-	2	9	18
ELT	1	12	12	-	-	-
Sub-Total	13	-	126	151	-	1.180
Instructor Training						
Total	- 2/	-	249.5	177	-	1.421

1/ of various duration.

2/ not calculable in view of varying number and duration of short-term experts.

TABLE IV

INDUSTRIAL TRAINING PROJECT

Estimated Expansion of Industrial Technician Training Programs, Council for Higher Education (YÖK) 1/

Academic Year	Eight Technician Training Centers for Which Bank Support Requested				Additional Centers Planned By Government				Total	
	Grade 1	Grade 2	Total	Graduates	Grade 1	Grade 2	Total	Graduates	Enrollment	Graduates
1986/87	1,020		1,020						1,020	
1987/88	1,020	980	2,000						2,000	
1988/89	1,300	980	2,280	940	2,600		2,600		4,880	940
1989/90	1,330	1,250	2,580	940	2,600	2,500	5,100		7,680	940
1990/91	1,330	1,280	2,610	1,200	2,600	2,500	5,100	2,400	7,710	3,600
1991/92	1,330	1,280	2,610	1,230	2,600	2,500	5,100	2,400	7,710	3,630

1/ A dropout rate of 4% is assumed for grades 1 and 2.

TABLE V

INDUSTRIAL TRAINING PROJECT

Projected Enrollment in Technician Training Centers by Main Subject

Subject	Antalya	Cankiri	Düzce	Iskenderun	Istanbul	Izmir	Kirikkale	Konya	Total
Electrical									
Control and Instrumentation	30	30	30	30	30	30	30	30	240
Communications	30	30	30	30	30	30	30	30	240
Industrial electronics	30	30	30	30	30	30	30	30	240
Electrical engineering	60	60	60	60	60	60	60	60	480
Mechanical									
Mechanical engineering	90	90	90	90	90	90	90	90	720
Air conditioning & refrigeration	30	30	30	30	30	30	30	30	240
Foundry technology	--	--	--	30	--	30	--	--	60
Agricultural engineering	--	--	30	30	--	--	--	30	90
Construction Technology	30	30	30	30	--	30	30	30	210
Computer Programming	30	--	--	--	30	30	--	--	90
Total	330	300	330	360	300	360	300	330	2.610

1/ All students will, in addition to their main subject, take courses in computer use, math, basic science, technical drawing, English and business applications.

b. Curriculum and Staff Development. The project would assist with the development of curricula for technician training, taking into account the particular requirements of Turkish manufacturing industry. The curriculum would cover a two-year training period, based on a 35 hour teaching week, with approximately 10 hours of theoretical and academic work, 20 hours of laboratory and workshop instruction and five hours of practical activities.

There would be a core of common subjects which TTC students would take in their first year. This would include math, basic science, computer applications, technical drawing and English. Students would specialize in one of ten specialist areas which would include control and instrumentation, communications, industrial electronics, electrical engineering, mechanical engineering, air conditioning and refrigeration, foundry technology, agricultural engineering, construction technology and computer programming. Petroleum and petrochemical engineering technology programs will be added to these in the coming years.

The emphasis in the curriculum would be on equipping students with a range of skills within their chosen specializations to ensure that graduates are able to adapt to rapidly changing technology in industry. In this regard, computer applications would be a core subject for both years and would equip graduates to utilize modern technology fully. Project institutions have achieved a high level of cooperation with local industry, particularly in placing students for training. Under the proposed project, students will spend up to eight weeks per school year in industrial placements and existing industry-TTC links would be institutionalized through the establishment of local Advisory Boards.

Curriculum development would take place at Ankara Headquarters of the Project as well as at two of the TTC's which already have some experience in the development of technician training courses and have close contacts with local industry. The Izmir TTC would be the main curriculum and development center with principal responsibility for mechanical engineering and construction courses. A subsidiary center would be developed at the Istanbul TTC for electrical and electronic engineering programs and computing. To assist with the development of suitable curricula for these new courses, the project would finance expert services for a total of 134 man-months. The curriculum experts would also assist the TTC Directors to achieve efficient use of classroom and workshop space.

In order to ensure the continuing relevance of the TTC program to the needs of local industry, strong links with local industry are essential. These already exist at the eight pilot TTCs selected by the project and have developed because of the interest

of local industry which have provided part-time instructors and in-plant training facilities where none presently exist. In order to enhance the continuity of such linkages through a more formal arrangement, an assurance was given during negotiations that each TTC would have a Local Advisory Board composed of the Director of the TTC and certain staff from The Council of Higher Education and representatives of local industry.

To staff the eight project TTCs, there would be a need for approximately 172 teaching staff of whom 40 would teach core subjects and 132 would teach specialist subjects (Table VI). The additional staff required for the proposed eight TTCs are some 156, since approximately 16 qualified teaching staff already are employed by YÖK; some 200 part-time instructors are available from local industry.

Under this project there would be a major effort in staff training, which would have two components. The first consists of an overseas fellowship training program for some 156 fellows for nine months duration. These staff would be recruited from graduates of university faculties of science and engineering. This overseas fellowship program would be conducted in three time phases with three groups each of 45 fellows. Within a month or so the first group consisting of about 20 instructor candidates will be sent abroad for training.

The future candidates will receive foreign language training in Turkey prior to overseas training, which would be undertaken through existing language training centers under the administration of YÖK. The timing of the overseas fellowship training program and enrollment growth have been phased to ensure the availability of well-qualified instructors when the new programs begin enrollment. On their return, these fellows would provide the basic core of technician instructors for the eight TTCs.

The second component of the staff training program has a longer term objective, comprising the development of an in-service staff development program at Izmir. Alongside its curriculum development activities, Izmir would develop training programs designed to upgrade new and existing staff teaching in the TTCs. The facilities at Izmir are adequate for this purpose, and existing staff, with appropriate technical assistance, have the capacity to develop this program. The staff development program at Izmir would cater to the additional staff requirements due to possible future expansion of the eight TTCs and, in addition, the needs of the other 52 TTCs as the program develops. In order to assist with the staff development programs at Izmir, the project includes 24 man-months of expert services, and 72 man-months of

TABLE VI

INDUSTRIAL TRAINING PROJECT

Requirements for Trained Instructors by Main Subject

Subject Areas	Teacher Requirements
Common Subjects	
Computer Applications	8
Mathematics	8
Basic science	8
Technical Drawing	8
English Language	8
Business Applications	8
Specialist Subjects	
Electrical:	
Control and Instrumentation	8
Communications	8
Industrial Electronics	16
Electrical Engineering	24
Mechanical:	
Mechanical Engineering	40
Air conditioning and refrigeration	8
Foundry Technology	2
Agricultural engineering	6
Construction	14
Computer Programming	6
Petroleum engineering	3
Petrochemical engineering	1
Total	184

overseas fellowships for about eight instructor trainers, who would return to Izmir following their overseas training.

Recent changes to the regulations governing YÖK administered salaries have improved those of TTC staff by placing them on the university pay scale. The career prospects for these instructors are good, given the opportunity for training abroad and the planned expansion of the system. Under these circumstances, it is not anticipated that the Project would experience difficulty in recruiting suitable staff for fellowship training. The attrition rate amongst overseas fellows is expected to be low, as the Government has a well-defined and effective bonding system.

c. Strengthening the TTC Management System. The Council of Higher Education already manages the 60 two year post-secondary vocational schools, but a major objective of the proposed project is to assist the Council strengthen its management system for the new type TTCs. In particular, it would enhance the management of student admissions, course development, academic standards, teaching methods, examinations, student placement in training and employment, staffing and staff development, equipment procurement and the establishment of appropriate physical facilities, and the development of a monitoring and evaluation system to provide feed-back into the curricula and program development.

To assist with the strengthening of the management system, the project would finance 69 man-months of expert services including a technical education planner (two and one-half man-years), two equipment procurement and facilities planners (two man-years), and an examination and accreditation expert (one man-year) as well as short term assistance to cover monitoring, evaluation and education management aspects (20 man-months). The project would also finance 34 man-months of short term overseas fellowships for 18 Council of Higher Education managerial staff and senior management of the TTCs.

The eight pilot TTCs supported in this project are an initial step in the development of pre-service technician training in Turkey, and The Council is planning to convert a further 16 of the other 52 two-year post-secondary institutions under its control into similarly industrially oriented TTCs. In order to assist The Council ensure the appropriate expansion of its technician training facilities, the project would also provide 27 man-months of expert services for feasibility and pre-investment studies.

B. Project Cost, Financing, Management and Implementation

The Industrial Training Project, as explained before, provides assistance to three Government institutions, The Council of Higher Education (YÖK), the Industrial Training and Development Center (SEGEM), and the State Institute of Statistics (SIS). Here again we will be talking about the particulars of the Technician Training portion of the Project only.

1. Cost of the Project

Project costs are estimated at TL 15.5 billion or US$ 3.70 million equivalent (YÖK portion) and include the refurbishment of existing buildings, provision of equipment, specialist services and fellowships. Costs of refurbishing existing facilities required to bring structures to acceptable standards would be borne by the Government. Equipment costs have been estimated on the basis of costs per student place in comparable Bank-wide financed facilities. Technical assistance costs include the amounts put aside for fellowship training and specialist services and the man-month cost of specialists includes housing, relocation costs, salaries, travel cost, subsistence, office services, fees, overhead and recruitment costs.

Equipment costs per training place in the TTCs are estimated at an average of US$ 6,500 which are comparable with those of Bank-wide financed facilities for technician training programs of this type. Existing building facilities at project institutions are adequate in size and layout to house the proposed training program supported by the project. Minor refurbishment is required at almost all sites, and is part of the project. Use factors in TTCs would be about 85% for classroom and just under 70% for workshops. The Council of Higher Education assured during the negotiations for the Project that it would: (a) provide appropriately refurbished buildings at project institutions prior to the scheduled arrival of equipment; and (b) that to permit a minimum adequate provision, the net floor area of classrooms, workshops and laboratories available to project assisted programs would equal or exceed 5.0 m^2 per project assisted training.

Project costs include a contingency allowance for unforeseen physical additions, equal to 10% of the estimated cost of all project items. Price contingencies between negotiations and the end of project implementation are estimated at 27% of base cost plus physical contingencies. Annual rates of price increases have been applied to both local and foreign costs and for all categories in US$ terms at the following annual rates: 8% in 1983, 7.5% in 1984, 7.0% in 1985 and 6% thereafter. The foreign exchange component was estimated as follows: (a) refurbishment of existing facilities, 25%; (b) equipment, 90% ; (c) specialist services, 80%, and (d) fellowships, 95%.

There are quantifiable costs and benefits to the proposed development of technician training in the eight Technician Training Centers. The costs of the investment comprise: refurbishing, equipping, furnishing, expert services for curricula development, expert services for the development of a management system in the Council of Higher Education, a fellowship program for instructor training, additional incremental recurrent costs deriving from higher salaries paid to more highly qualified instructors and expandable materials and maintenance. The benefits of the investment are the improved quality of industrial manpower, and hence increased industrial productivity. As a proxy for these benefits, the incremental salaries earned by more highly qualified technician graduates of the eight TTCs as compared with the salaries of previous graduates are taken. On that basis, the ratio of the present value of the estimated benefits to the proposed development of the eight TTCs to estimated costs is a factor of 2.5, which implies a high return to resources devoted to this component of the project.

2. Project Financing

The proposed Bank loan of US$ 32.4 million would finance the foreign exchange component of the project. The Government would finance the balance of project costs. Project financing would be in accordance with Table VII. In order to expedite pre-investment work, retroactive financing of up to US$ 0.2 million is recommended for the Council of Higher Education to cover the cost of office equipment and specialist services necessary for timely project start up.

Table VII/ Financial Plan

Implementing Agency and Category of Expenditure	Government	Bank	Total	Estimated Share of Bank financing (%)
	--------US$ million --------			
Council of Higher Education (YÖK)				
Refurbishment of existing buildings	0.6	-	0.6	0
Equipment	2.7	24.0	26.7	90
Technical Assistance	0.9	8.2	9.1	90
Future Project Development	-	0.2	0.2	85
Incremental Recurrent Costs	0.4	-	0.4	0
Total for YÖK	4.6	32.4	37.0	88

3. Management and Implementation

Industrial Training Project is the Project being implemented by the three Government agencies involved: the Council of Higher Education (YÖK), the Industrial Training and Development Center (SEGEM), and the State Institute for Statistics (SIS).

a. Project Management. The YÖK portion of the project is being administered through the Project Implementation Unit in the Technician Training Unit (TTU) of YÖK headed by an Administrator/Coordinator of the TTU, also the Director of PIU. The Technician Training Unit presently has an Administrator/Coordinator, Deputy Administrator/Coordinator and Procurement Officer, an Executive Secretary, a Project Secretary, an Accountant, a Facilities Planner, a Teacher Recruitment and Placement Officer, and a University Relations Officer. A curriculum and teacher training development unit is being established at the Izmir TTC and a subsidiary curriculum development unit and English Language and Curriculum Development Unit at the Istanbul TTC.

The Administrator/Coordinator appointed by the Council will hire local architects to carry out minor design and supervision work associated with alterations and refurbishment of existing facilities. There are no site acquisition problems because all project institutions have somewhat adequate facilities. Many higher vocational centers including the eight within the Project, however, have been able to acquire additional sites with the help of local government agencies, and this will make the future expansion of present facilities or construction of new campuses possible.

b. Technical Assistance. To simplify management of technical assistance, it was decided that the three implementing agencies would obtain specialist services and fellowships as comprehensive TA contracts. Following the development of a short list of five reputable firms by YÖK staff, the proposals were obtained and the evaluation process was started in accordance with the principals and procedures set by the "Guidelines for the Use of Consultants by World Bank Borrowers and by the World Bank and Executing Agency." Thus the Technical Assistance portion of the YÖK project was finalized, presently waiting for the approval of the World Bank. The consultants are scheduled to start work in Turkey about the middle of January of 1985.

c. Procurement of Equipment and Development of Physical Facilities. Invitations to bid for individual project items would be grouped to the maximum extent possible and contracts awarded on the basis of Table VIII.

Table VIII / Procurement Arrangement /a

Project Element	US$ Million — Procurement Method ICB	LCB	Other	Total Cost
Renovation and furniture for existing facilities	-	0.3 (0.0)	0.3 (0.0)	0.6 (0.0)
Equipment	21.3 (19.4)	4.0 (3.6)	2.5 (2.0)	27.8 (25.0)
Technical Assistance and Pre-investment Studies	-	-	12.9 (11.7)	12.9 (11.7)
Total	21.3 (19.4)	4.3 (3.6)	15.7 (13.7)	41.3 (36.7)

/a Figures in parentheses are the respective amounts financed by the Bank Loan.

In respect of equipment, bid packaging would also be reviewed by the Bank prior to bid invitation. In comparison of bids for equipment to be procured through international competitive bidding (ICB), domestic manufacturers would be allowed a preferential margin of 15%, or the existing customs duty, whichever is lower, over the c.i.f. prices of competing imports. Under ICB procedures, invitations to bid and proposed awards of contracts would be reviewed by the Bank prior to final award decisions. It is estimated that this review would cover about 77% of the value of all equipment contracts (US$ 21.3 million equivalent). The remaining 23% of equipment contracts would be subject to selective post-award reviews.

In order to function effectively, the higher vocational schools should have adequate, well-designed campuses. The physical facilities of the eight schools selected to become technician training centers were found suitable to a certain degree for the needed training, and infact, this was one of the reasons for their selection. Despite this fact, however, a number of studies are being carried out by quite a few universities, among them the parent institutions of the eight as well, to acquire new sites for their higher vocational schools and to improve their general outlook by either developing the existing facilities or through constructing new buildings. Such studies will receive the help and supervision of the Project Facilities Improvement Unit in a very near future, following the finalization of the employment of the Facilities Planning Expert.

d. Implementation Schedule. The project would be completed in about five and a half years (1984-90) in accordance with the Implementation Schedule shown in Figure 6. The project is in a state of preparation that would permit quick disbursement of funds because: (a) construction of buildings (a source of delay in the past) would be limited to minor refurbishment of existing buildings and would not be financed by the Bank; (b) equipment lists and specifications have been drawn up with external assistance and submitted for Bank review; and (c) the technical assistance package has progressed to the stage of employment of consultants. Project completion would be December 31, 1989 and the Closing Date would be June 30, 1990.

C. Benefits of the Project

Under the proposed project, the potential of Turkey's industrial sector, particularly manufacturing and exporting industries, would be enhanced through the extention and improvement of the national capacity to provide industrial training. Institutional development would occur in two key industrial training agencies, YÖK and SEGEM. Industrial Productivity would be improved through the improvement and expansion of pre-service and in-service technician training programs and of industrial training programs and of industrial training programs at management, technician and supervisory levels provided by SEGEM and YÖK. The provision of increased and improved economic and social data would assist the management of the economy.

The eight TTCs for which financing is proposed in this project are pilot centers which would produce about 940 graduates in 1989, building to some 1,230 graduates annually from 1992, which would represent about 10% of annual demand at that time. Additional TTCs planned by the Government would build on the foundation provided by the pilot eight and would supply an estimated further 20% of demand.

The project would facilitate the improvement of technician training through the development of suitable curricula and training materials, and through the establishment of an in-service staff development program as well as further strengthening the management of the new TTCs within YÖK. Through the project, some 164 fellows would be trained to instructor or technician instructor level, and these would provide both a sufficient number of staff for the TTCs and also a core group upon whom to build in subsequent phases of development of the TTCs.

Using the higher salaries of graduates of project institutions as a proxy measure for enhanced industrial productivity, the benefit/cost ratio to resources applied to the development of the eight pilot TTCs under the proposed project is approximately two and one-half times as high as on resources devoted to existing training programs. Unquantifiable, though significant, are the additional benefits likely to accrue to the

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FIGURE 6

TURKEY

INDUSTRIAL TRAINING PROJECT

Implementation Schedule

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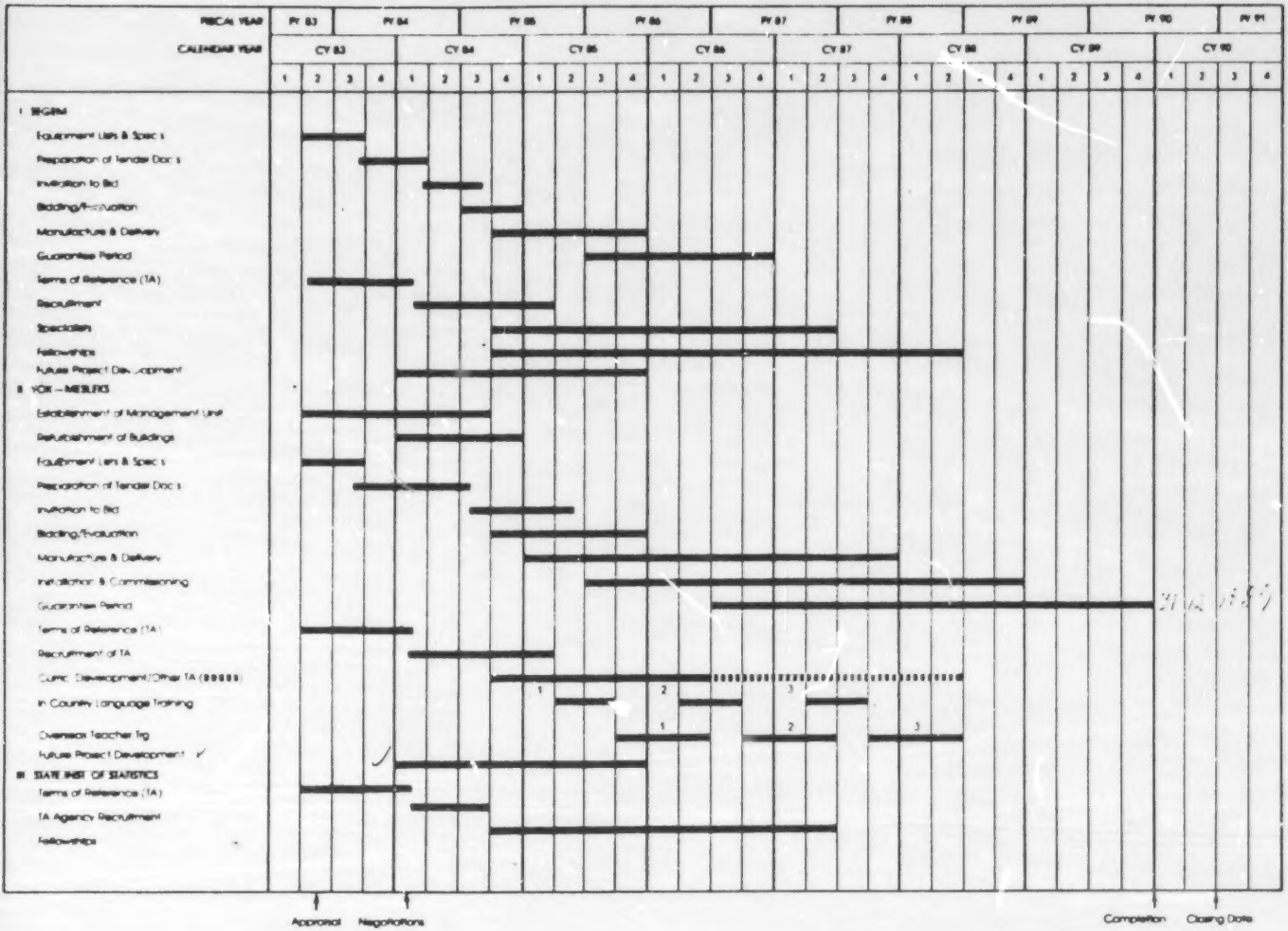

World Bank – 25154

Government by way of increased output and foreign exchange earnings as a result of the enhanced productivity of labor in the industrial and exporting sectors following the provision of, and in-plant in-service upgrading of, technician-level manpower through the proposed program of YÖK and SEGEM.

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IV. CONCLUSION

I had started this paper by stating that the contributions of well-planned and well-executed practices of vocational and technical education to the advance and betterment of societies are being better understood and appreciated every day all over the world. While at one hand the rapidity of technological changes make the adjustment and updating of programs of vocational instruction to the newly developed needs rather difficult, a number of elements within the education system always seem to be lagging behind, no matter what. The necessity of continuous appraisal thus becomes a must if, in the words of Kemal Atatürk, "a nation is really committed to raise herself to and above the level of her contemporaries."

The objectives and scope of the Industrial Training Project embrace such an aim. It can therefore be said that this somewhat comprehensive approach is liable to change the entire outlook of Turkey's economy and Turkey as well. The expected outcome of the project planned and programmed with the initiative of the President of the Council of Higher Education has for some time been exciting a large number of people in Turkey and gaining the genuine support of many Government officials headed by the President of the Republic himself. Recently the Turkish Government indicated that a great deal of backing would be given to the Council's extension of post-secondary two-year vocational and technical education services to additional provinces in Eastern and Southeastern parts of Turkey.

Thus, it seems that the carefully prepared Industrial Training Project has indeed a very good chance to become a success, if implemented as planned and with the current level of interest. It has all the necessary elements to adequately deal with some of the most pressing manpower needs of the country. And the manpower shortages of the country, as well as the possible contributions of well-functioning higher vocational schools to the compensation of such shortages, seem to have been better recognized by Government circles and by the public at this time. No doubt the improvements in the size of available skilled manpower, and the increase in productivity and in quality that will follow, will bring noticeable positive changes and benefits to even the most distant corners of the country and in all probability the Project will become a continuous process, extending itself far beyond the presently set termination dates.

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